FUEL TANK EXTERNAL WIRE TESTS

Background:

On a regularly scheduled telecon held on July 3rd, 1997, the NTSB asked Boeing to advise them as to what tests should be performed on the external fuel tank wiring.

TEST PLAN:

The following non destructive tests should be performed in the following sequence on the external tank wiring to determine the condition of both the wire insulation construction and conductor:

1- Visual Examination

Inspect 100% of the wire using a hand magnification in the range of 10X magnification. The purpose of this inspection is to identify any anomalies in the wire insulation. If suspicious areas are noted, do a visual examination of the suspicious areas using 30X to 35X magnification.

2- x-ray Examination

Inspect 100% of the wires by X-ray analysis to determine the integrity of the shield strands and internal conductor. This should be accomplished as a minimum in two planes 180 degrees apart.

3- CAT Scan Examination

Inspect 100% of the wires to observe wire insulation conditions such as internal conditions not detectable by X-ray analysis.

4- Infra Red Imaging

Inspect 100% of the wires with Infra Red sensitive imaging equipment. Apply a low voltage (NOT GREATER THAN 20 Vdc) with sufficient electrical current to achieve a conductor temperature of approximately 100C. This test is capable to detecting anomalies in the wire insulation.